

# **Integrated Reactor Inspection Planning in the U.S. Nuclear Regulatory Commission**

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Reactor Projects

U.S. Nuclear Regulatory Commission

Region II

Presentation to the 2002 DOE Integrated Safety  
Management Forum

May 8, 2002

*The best way to do the job is for each worker to keep track of what every other worker is doing. Let them work on putting the puzzle together in the sight of others, so that every time a piece of it is fitted in by one, all the others will immediately watch out for the next step that becomes possible in consequence. The group works “independently together” and through consensus, assembles the puzzle in the most efficient way.*

**Michael Polanyi**

# Overview

- NRC Mission, Responsibility, Organization
- Inspection and Oversight Program at Nuclear Power Plants
- Managing the NRC's Reactor Inspection Program
- Your Questions

# NRC MISSION

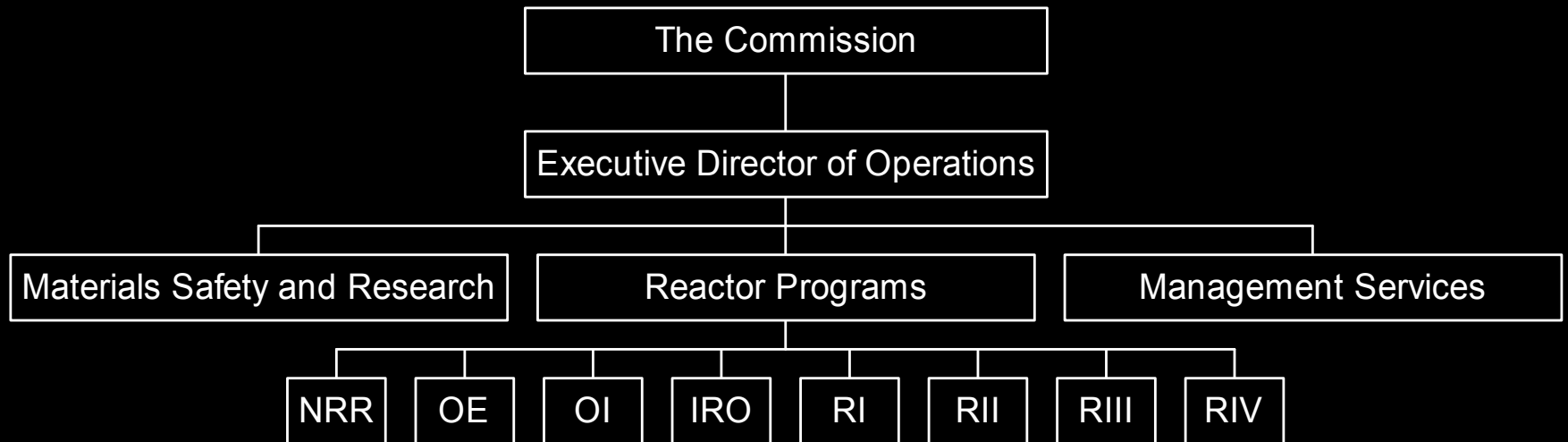
Regulate the civilian use of byproduct, source and special nuclear materials:

- to ensure adequate protection of public health and safety;
- to promote common defense and security;
- to protect the environment

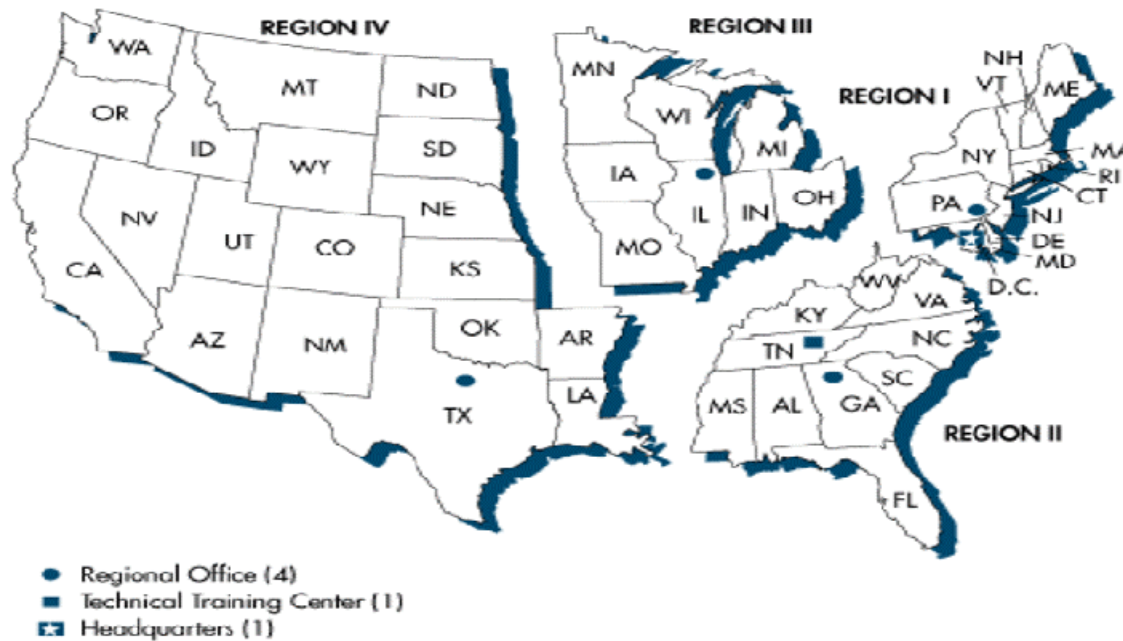
# NRC's Responsibility

- Regulation of commercial nuclear power reactors
- Non-power research, test and training reactors
- Fuel cycle facilities
- Medical, academic and industrial uses of nuclear materials
- The transport, storage and disposal of nuclear materials and waste

# NRC Organization Chart



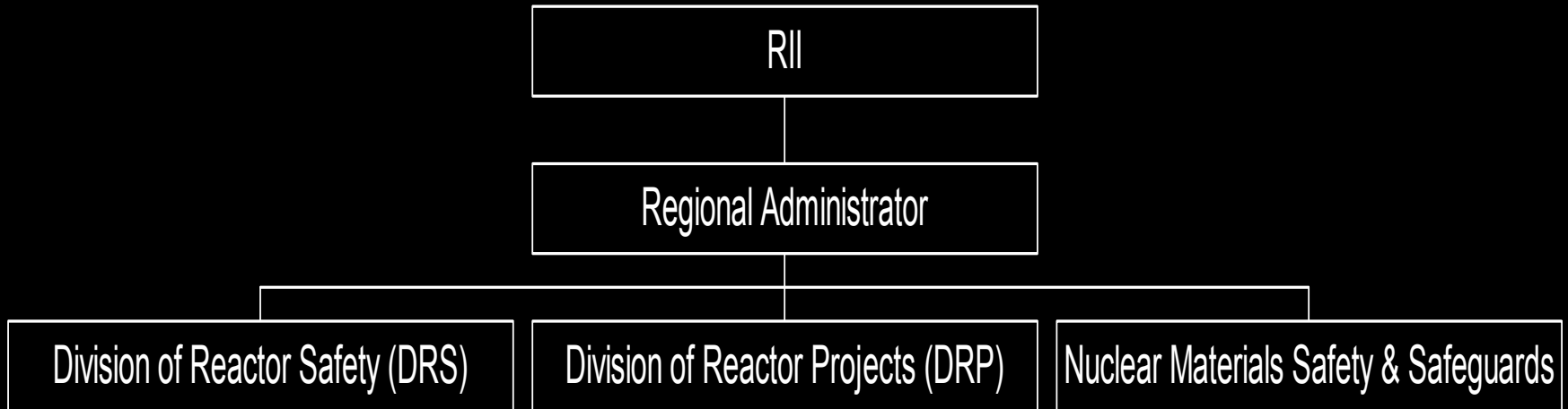
# NRC Regions



*Note:* Alaska and Hawaii are included in Region IV.  
*Source:* Nuclear Regulatory Commission

# NRC Region II

Atlanta, Georgia



Executes established NRC policies and assigned programs relating to inspection, licensing, enforcement, investigation, governmental liaison, and emergency response within regional boundaries.



# Division of Reactor Projects (DRP)

⇒ inspection of all reactors

- Routine (i.e., baseline inspection program)
- Supplemental
- Reactive/Special Inspections
  - Enforcement
  - Assessment
  - Allegations

# Division of Reactor Safety (DRS)

⇒ implements inspection and enforcement programs

- Engineering
- Maintenance
- Operator Requalification
- Radiological Control
- Emergency Preparedness
- Security

# REGULATORY FRAMEWORK

NRC's  
Overall  
Safety  
Mission

**PUBLIC HEALTH AND SAFETY  
AS A RESULT OF CIVILIAN  
NUCLEAR REACTOR  
OPERATION**

Strategic  
Performance  
Areas

**REACTOR  
SAFETY**

**RADIATION  
SAFETY**

**SAFEGUARDS**

Cornerstones

**INITIATING  
EVENTS**

**MITIGATION  
SYSTEMS**

**BARRIER  
INTEGRITY**

**EMERGENCY  
PREPAREDNESS**

**PUBLIC**

**OCCUPATIONAL**

**PHYSICAL  
PROTECTION**

-----  
**HUMAN  
PERFORMANCE**

-----  
**SAFETY CONSCIOUS WORK  
ENVIRONMENT**

-----  
**PROBLEM  
IDENTIFICATION AND  
RESOLUTION**

# Inspection and Oversight at Nuclear Power Plants

⇒ obtains objective evidence of plant safety; provides for an objective assessment of performance

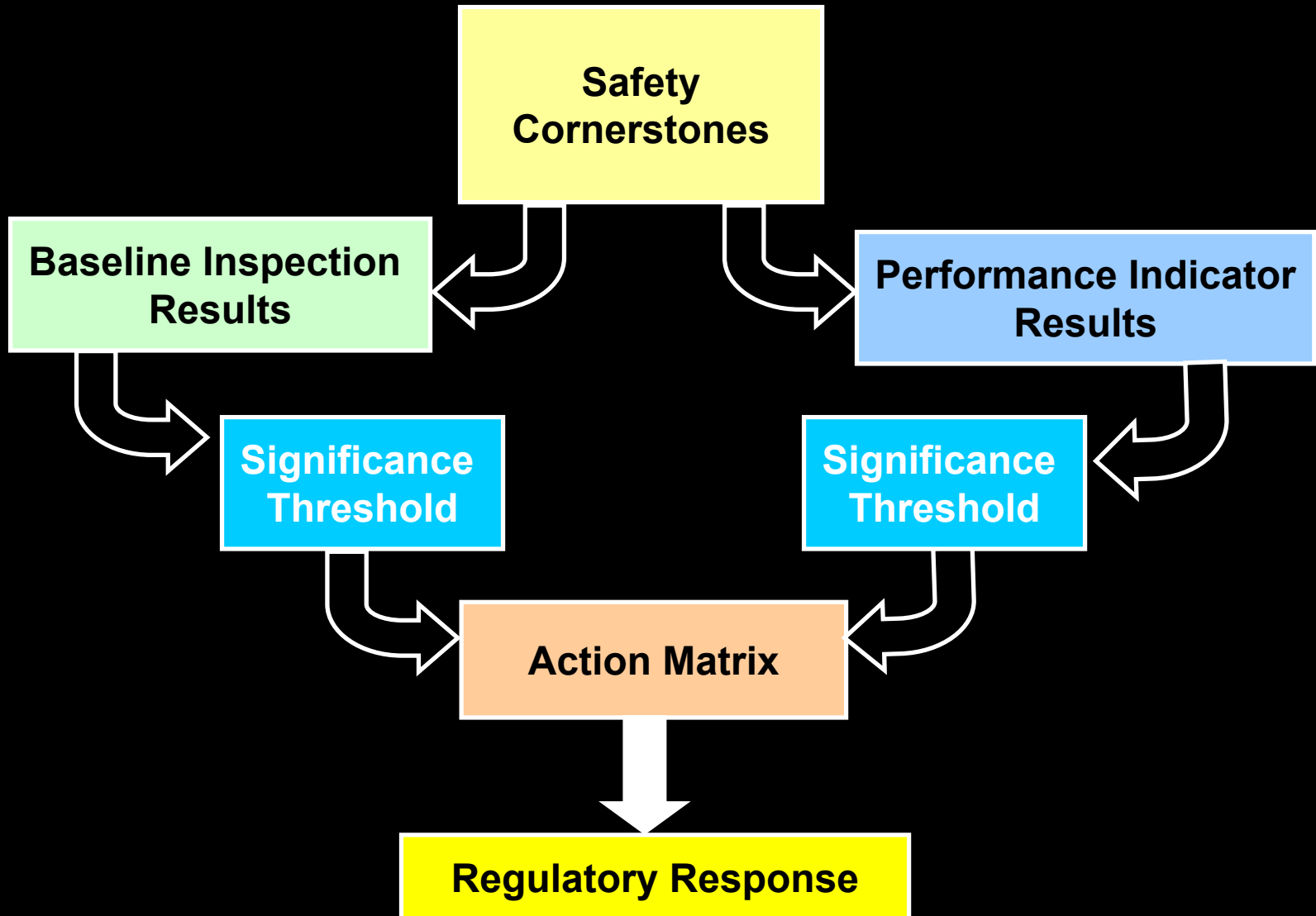
## INSPECTION

- Baseline Inspections
- Supplemental Inspections
- Performance Indicators
- Emphasis on Safety Significance
- Licensee Corrective Actions

## ASSESSMENT

- Action Matrix
- Mid and End-of Cycle Assessment
- Assessment Letters

# Reactor Oversight Process





# Action Matrix

		Licensee Response Column	Regulatory Response Column	Degraded Cornerstone Column	Multiple Repetitive Degraded Cornerstone Column	Unacceptable Performance Column
Results		All assessment inputs (performance Indicators (PI) and inspection findings) Green; cornerstone objectives fully met	One or two White inputs (in different cornerstones) in a strategic performance area; Cornerstone objectives fully met	One degraded cornerstone (2 White inputs or 1 Yellow input) or any 3 White inputs in a strategic performance area; cornerstone objectives met with minimal reduction in safety margin	Repetitive degraded cornerstone, multiple degraded cornerstones, multiple Yellow inputs, or 1 Red input <sup>1</sup> ; cornerstone objectives met with longstanding issues or significant reduction in safety margin	Overall unacceptable performance; plants not permitted to operate within this band, unacceptable margin to safety
Response	Regulatory Conference	Routine Senior Resident Inspector (SRI) interaction	Branch Chief (BC) or Division Director (DD) meet with Licensee	DD or Regional Administrator (RA) meet with Licensee	EDO (or Commission) meet with Senior Licensee Management	Commission meeting with Senior Licensee Management
	Licensee Action	Licensee Corrective Action	Licensee corrective action with NRC oversight	Licensee self assessment with NRC oversight	Licensee performance improvement plan with NRC oversight	
	NRC Inspection	Risk-informed baseline inspection program	Baseline and supplemental inspection <b>95001</b>	Baseline and supplemental inspection <b>95002</b>	Baseline and supplemental inspection <b>95003</b>	
	Regulatory Actions	None	Document response to degrading area in assessment letter	Document response to degrading condition in assessment letter	10 CFR 2.204 DFI 10 CFR 50.54(f) letter CAL/Order	Order to modify, suspend, or revoke licensed activities
Communications	Assessment Report	BC or DD review / sign assessment report (w/ inspection plan)	DD review / sign assessment report (w/ inspection plan)	RA review / sign assessment report (w/ inspection plan)	RA review / sign assessment report (w/ inspection plan) Commission informed	
	Public Assessment Meeting	SRI or BC meet with Licensee	BC or DD meet with Licensee	RA discuss performance with Licensee	EDO (or Commission) discuss performance with Senior Licensee Management	Commission meeting with Senior Licensee Management
Increasing Safety Significance →						

<sup>1</sup> It is expected in a few limited situations that an inspection finding of this significance will be identified that is not indicative of overall licensee performance. The staff will consider treating these inspection findings as exceptions for the purpose of determining appropriate actions.

# Managing the NRC's Reactor Inspection Program

⇒ the primary objective is to coordinate and integrate all NRC activities at commercial reactor sites

- Baseline, Supplemental, Event Response and Generic Safety Issues
- Site Specific Inspection Plan
- Periodic Reviews

## Developing the Inspection Plan

⇒ the plan for the upcoming cycle is developed, reviewed and approved before the end of the current cycle.

- Develop Draft Plan/Input to RPS
- Hold Assessment Meeting
- Modify Schedule/Update RPS
- Inform Licensee of 12-mos Inspection Plan



# NRC Reactor Programs System (RPS)

⇒ inspection program planning and tracking management system

- Inspection Planning (IP)
- Inspection Procedure Authority System (IPAS)
- Inspection Reporting
- Inspection Report Tracking System (IRTS)
- Allegation Management System (AMS)
- Enforcement Action Tracking System (EATS)
- Report Review
- Reports
- Tables
- Task Action Completion System (TACS)

# NRC Reactor Programs System (RPS)

- Inspection Planning (IP)
  - schedule/track inspectors & inspections
  - monitor and update
  - record actual hours

# NRC Reactor Programs System (continued)

- Inspection Report Authority System (IPAS)-
  - process IP change notices
  - lists procedures; manual chapters
- Item Reporting (IR)
  - synopsis of inspection results
  - track and analyze inspection results
  - track and update inspection status



Current Pen



Help



Exit

IP

- Create/Update Inspection Plan
- Activity Calendar
- Create Activity
- Personal Calendar
- TAC Scheduling
- Site/IPC Detail
- Associate Activities w/Inspection Report No.
- Activity Search & Selection
- Default Organization Assignment
- Calendar Schedule

IP



Save



Refresh



Cancel Proc



Help



Clear



Exit

## Create/Update Inspection Plan

Site Name: Brunswick

IP Cycle: 12/30/2001 01/04/2003

Profile: @REGION

Select Available Procedures

Modify Selected Procedures

Unscheduled Procedures

## Available Procedures

Procedure

IPE

Functional  
Area☐ Completed Tls

Proc. No.	Description	IPE
36100	10 CFR Part 21	OA
38703	Commercial Grade Ded	OA
40001	Resolution Of Employer	OA
41500	Training & Qualification	OA
42001	Emergency Operating P	OA
42700	Plant Procedures	OA
49001	Erosion/Corrosion Prog	OA
50001	Steam Generator Repla	OA
52001	Digital Retrofits Receiv	OA
52002	Digital Retrofits Not Rec	OA
55050	Nuclear Welding	OA
55100	Structural Welding	OA

&gt;

&lt;

## Selected Procedures

Docket	Proc. No.	Description	IPE
05000324	71111	Rx Sfty-Initng Evnts, Mit	BI
05000325	71111	Rx Sfty-Initng Evnts, Mit	BI
05000324	7111101	Adverse Weather Protec	BI
05000325	7111101	Adverse Weather Protec	BI
05000324	7111102	Eval of Changes, Tests c	BI
05000325	7111102	Eval of Changes, Tests c	BI
05000324	7111104	Equipment Alignment (C	BI
05000325	7111104	Equipment Alignment (C	BI
05000324	7111104S	Equipment Alignment	BI
05000325	7111104S	Equipment Alignment	BI
05000324	7111105A	Fire Protection	BI
05000325	7111105A	Fire Protection	BI

180 rows retrieved



Refresh



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Help



Close



Exit

## Activity Calendar

Monday

May 06, 2002

Profile @REGION

Week List View

Week Gantt View

Three Month List View

Three Month Gantt View

Month List View

Month Gantt View

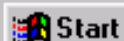
## Activities

Site	Start Dt	End Dt	Activity Id	Lead	Rpt No	Type	Activity Name
BF	03/24/2002	06/22/2002	RESBASE	W2S	2002002	I	RES BASELINE2
BF	05/20/2002	05/24/2002	INPO-ATV			P	INPO ACCREDITN TM VISIT
BF	06/23/2002	09/21/2002	RESBASE	W2S	2002003	I	RES BASELINE3
BF	07/08/2002	07/09/2002	PS-RP	DWJ		I	RAD PROTECTION
BF	07/08/2002	07/12/2002	EB2-HS	RCN		I	HEAT SINK
BF	07/08/2002	07/12/2002	PS-SEC	KHD		I	SECURITY
BF	07/10/2002	07/12/2002	PS-RP	DWJ		I	RADIATION PROTECTION A
BF	07/15/2002	07/19/2002	INPO-PES			P	INPO PLANT EVAL - SIMUL
BF	07/22/2002	07/26/2002	PS-RP	EIT		I	RADIATION PROTECTION
BRU	03/31/2002	06/29/2002	RESBASE	TEE	2002002	I	RES BASELINE2
BRU	06/03/2002	06/05/2002	PS-RP	FNW		I	RADIATION PROTECTION

Comments:

Joelle Starefos on HQ rotation for this reporting cycle.

Ready



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U.S. NRC - Reactor ...



Microsoft PowerPoint - [IS...



10:33 A

RITS Reports

- 1 Site Activity Timeline
- 2 Resource Activity Timeline by Individual
- 3 Resource Activity Timeline by Organization
- 4 Outage/INPO Activity Timeline
- 5 Team Inspection Timeline
- 6 Major Activity Timeline
- 7 Organization Schedule
- 7a Site Schedule
- 8 Site Activity Detail
- 9 Actual Hours by Procedure/TI/TAC
- 10 Actual Hours by Inspection Report Summary
- 11 IP Functional Area to IPE Detail
- 12 IP Functional Area Facility Summary
- 13 IP Functional Area to IPE Regional Summary
- 14 IPE Facility Summary
- 15 Procedure to IPE Regional Summary
- 16 Procedure Summary by IP Functional Area
- 17 Procedure Summary by Insp. Program Element (IPE)
- 18 Procedure Analysis by Procedure/IPE
- 19 Procedure Analysis by TI Status
- 20 IP Functional Area Inspection Detail
- 21 Operator Licensing Exam Schedule
- 22 Inspection / Activity Plan
- 23 Planning Considerations Report





Cancel

Help

Clear

Exit

**Site Activity Timeline****Profile**

@REGION

**Sites**

&lt;All&gt;

Browns Ferry

Brunswick

Catawba

Crystal River

Farley

**Organizations**

&lt;All&gt;

2000 OFFICE OF REGIONAL ADMINISTRATOR, REGION 2

2001 ENFORCEMENT &amp; INVESTIGATION COORDINATION

2100 DIVISION OF RESOURCE MANAGEMENT &amp; ADMINI

2110 INFORMATION RESOURCE BRANCH

2120 RESOURCE MANAGEMENT BRANCH

2130 PERSONNEL STAFF

**General**

Start Date: 05/2002

Rpt for 3 mos. ☒Rpt for 12 mos. ☐Summary? ☒Sort by Start Date? ☒Include INPO? ☒Include Residents? ☐Include OUTAGE? ☒

Phase Code:

5 Operational



OK



Cancel

Site Activity Timeline by Start Date (Three Month Gantt)

Page 1 of 1

05/06/2002 14:27:31






Report 1

U. S. Nuclear Regulatory Commission  
Reactor Programs System (IP)  
Site Activity Timeline by Start Date (Summary)  
NOT FOR PUBLIC DISCLOSURE

Region No: @REGION

Phase Code 5

Period: 05/01/2002 through 07/31/2002

Site	Activity	Title	Lead	Org	Size	Start Date	Rpt #	May				June				July		
								5	12	19	26	2	9	16	23	30	7	14
SBQ	OUTAGE	U2-OUTAGE REFUELIN			0	04/14/2002												
SBQ	INPO-PES	INPO PLANT EVAL - SIM			2	05/17/2002												
SBQ	PS-SBC	SECURITY	KHD	2340	1	05/24/2002												
SBQ	PS-RP	RADIATION PROTECTI	DWU	2340	1	07/10/2002												
SBQ	INPO-PE	INPO PLANT EVALUATI			4	07/15/2002												

Zoom In

## Inspection / Activity Plan

First Page

Page 1 of 1

5/06/2002 14:25:03

Report 22

Saint Lucie

## Inspection / Activity Plan

05/01/2002 - 04/30/2003

Unit Number	Inspection Activity	Title	No. of Staff on Site	Planned Dates Start	End	In:
1,2	EB2-MR - MAINTENANCE RULE		1			
1,2	IP 7111128	Maintenance Rule Implementation		06/10/2002	06/14/2002	Baselir
1,2	PB3-AWP - ADVERSE WEATHER INSPECTION		1			
1,2	IP 7111101	Adverse Weather Protection		06/14/2002	06/18/2002	Baselir
1,2	PB3-FPM - FLOOD PROTECTION INSPECTION		1			
1,2	IP 7111106	Flood Protection Measures		06/14/2002	06/18/2002	Baselir
1,2	PS-SEC - SECURITY		1			
1,2	IP 7113001	Access Authorization Program (Behavior Observation Only)		08/19/2002	08/23/2002	Baselir
1,2	IP 7113002	Access Control (Search of Personnel, Packages, and Vehicles: Identification and Authoriza		08/19/2002	08/23/2002	Baselir
1,2	IP 71151	Performance Indicator Verification		08/19/2002	08/23/2002	Baselir
1	EB2-ISI - INSERVICE INSPECTION		1			
1	IP 7111108	Inservice Inspection Activities		10/07/2002	10/11/2002	Baselir
1,2	LIC REN - ST. LUCIE FIRST LICENSE RENEWAL INSP		4			
1,2	IP 71002	License Renewal Inspection		10/21/2002	10/25/2002	Other I
1,2	PS-RP - RADIATION PROTECTION		3			
1,2	IP 7112101	Access Control to Radiologically Significant Areas		12/02/2002	12/06/2002	Baselir
1,2	IP 7112103	Radiation Monitoring Instrumentation and Protective Equipment		12/02/2002	12/06/2002	Baselir
1,2	IP 7112201	Radioactive Gaseous and Liquid Effluent Treatment and Monitoring Systems		12/02/2002	12/06/2002	Baselir
1,2	IP 7112203	Radiological Environmental Monitoring Program		12/02/2002	12/06/2002	Baselir
1,2	IP 71151	Performance Indicator Verification		12/02/2002	12/06/2002	Baselir
	LIC REN - SECOND ST. LUCIE LICENSE RENEWAL INSPECT		4			

First Page

- 1 Change Notice Report
- 2 List Manual Chapters
- 3 List Procedures
- 4 List Procedures Cited by Manual Chapter
- 5 List Manual Chapters Citing a Procedure
- 6 List Citations by IPE code
- 7 List Citations by IP Functional Area code
- 8 Inspection Procedure History
- 9 Manual Chapter History

Reports from RITS

- 10 Procedure Effort by Region / Facility
- 11 TI Procedures by Region / Facility
- 12 Inspection Reports by Region / Facility
- 13 Facility Procedure Effort via Regional Resources
- 14 Facility TI Procedures via Regional Resources
- 15 Facility Inspection Reports via Regional Resources
- 16 IPE Inspections by Region / Facility
- 17 IP Functional Area Inspections by Region / Facility
- 18 IP Functional Area / IPE Matrix



Main Chapter



Jump From



Check History



Print Number



Help



Exit

## Procedure Effort by Region/Facility

## Select a Region

- ☐ Region I  
☒ Region II  
☐ Region III  
☐ Region IV

## Actual Hours Date

From:

10/01/2001

To:

09/30/2002

none

☐ Include Inactive

Insp Proc No	Status Cd
93812	A
95001	A
95002	A
95003	A

Site Abbrev	Site Name
<ALL>	
BEL	Bellefonte
BF	Browns Ferry
BRU	Brunswick
CAT	Catawba
CR	Crystal River
FAR	Farley
HAR	Harris

Docket No	Docket Name
<ALL>	
05000438	Bellefonte 1
05000439	Bellefonte 2
05000259	Browns Ferry 1
05000260	Browns Ferry 2
05000296	Browns Ferry 3
05000325	Brunswick 1
05000324	Brunswick 2



Ok



Cancel



## Facility Procedure Effort by Region / Facility

Page 1 of 1

06/08/2002

14:36:48

RTS Report 10

## U. S. Nuclear Regulatory Commission

## Reactor Programs System - (IPAS)

## Facility Procedure Effort by Region / Facility

Region No: 2

Period: 10/01/2001 through 09/30/2002

Facility Name	Report Number	IPE	Regular Hours	O/T Hours	Status	Inspection Completion date
---------------	---------------	-----	---------------	-----------	--------	----------------------------

## Farley 1

Procedure: 95001

2001009	SP	10.0	0.0	Complete	11/21/2001
---------	----	------	-----	----------	------------

Procedure Totals:

10.0 0.0

Facility Totals:

10.0 0.0

## Farley 2

Procedure: 95001

2001009	SP	10.0	0.0	Complete	11/21/2001
---------	----	------	-----	----------	------------

Procedure Totals:

10.0 0.0

Facility Totals:

10.0 0.0

## Surry 1

Procedure: 95001

Make Report Larger

File Edit Record **Topics** Reports Window Help



Save



Print

Report Item...  
Independent Item...

Search Items...

Procedure Status...



New



Edit Item



Report Item



Independent



Search Item



Procedure



Help



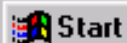
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Exit

# IR/Power

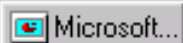
Ready



Start



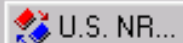
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Microsoft...



Netscape



U.S. NR...



U.S. N...



11:36 A



- 1 Item List...
- 1a Item List (ROP) ...
- 2 Standard Report 1...
- 3 PIM Report...
- 4 Revised Oversight Process PIM Report...
- 5 Open Items Report ▶
- 6 Procedure Status...



Independent/Shared Item Procedures

Help

Close

Exit

# IR/Power



**Revised Oversight Process PIM List Report Criteria**

**Site**

☒ By Site ☐ By Docket

☐ Region 1  
☒ Region 2  
☐ Region 3  
☐ Region 4  
☐ All

Catawba  
 Crystal River  
 Farley  
**Harris**  
 Hatch  
 McGuire

**Type**

☒ Compliance  
☒ Follow-up  
☒ Other

<All>  
 AV Apparent Violation  
 FIN Finding  
 NCV NonCited Violation  
 URI Unresolved item  
 VIO Violation

**Event Date**

From: 05/06/2001 To: 05/06/2002

**Sort Criteria**

Cornerstone

☐ Include Draft Items  
☐ Include Record ID ☐ Include Cross-cutting areas

OK Cancel Help



## Revised Oversight Process PIM List Report

Page: 1 of 3  
05/06/2002 14:33:08  
IR Report 4.

## United States Nuclear Regulatory Commission

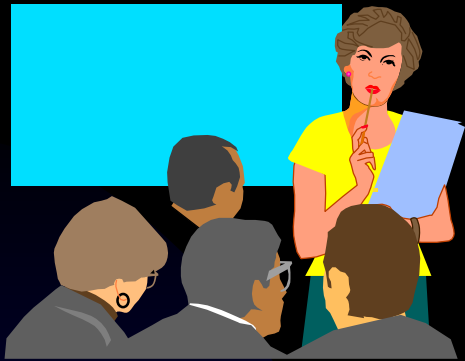
### Revised Oversight Process PLANT ISSUE MATRIX

By Cornerstone

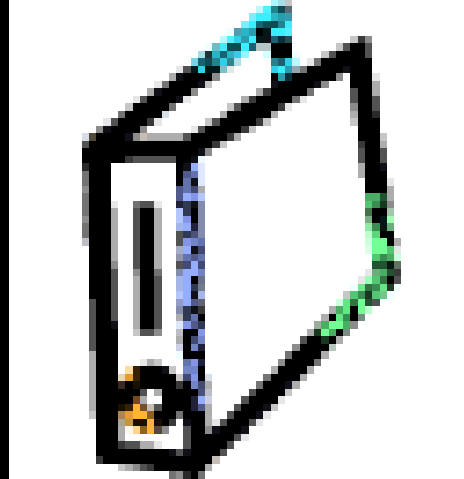
Region 2  
Harris

Date	Source	ID	Type	Cornerstone	Significance Determination	Item Title Item Description/Significance
12/29/2001	2000004	NRC	FIN	Mitigating Systems	GREEN	INACCURATE RISK ASSESSMENT FOR STARTUP TRANSFORMER
EA Case: -  Dockets Discussed: 05000400 Harris 1						Green. A finding was identified in Inspection Report 50-400/00-04 related to an inaccurate B Startup Transformer outage that occurred in July 2000. The inadequate risk assessment error in the risk assessment model. The safety significance has been determined to be compensatory actions were put in place to be able to return the transformer to service because the risk reduction associated with those compensatory actions offset the risk i
12/29/2001	2001005-01	NRC	NCV	Mitigating Systems	GREEN	TWO EXAMPLES OF FAILURE TO IMPLEMENT THE FIRE PROTECTION PROGRAM IN SPREADING ROOM TUNNEL
EA Case: -  Dockets Discussed: 05000400 Harris 1						Green. Two examples of failing to implement the fire protection program were identified room (CSRB). The first example involved the failure to have automatic sprinklers in the where multiple safety-related cable trays contain safe shutdown cables. The second example to follow the design control program for resolution of unqualified thermolag fire barriers.  The safety significance was determined to be very low because of the very low probability area, and because of proceduralized operator recovery actions that would restore off-site
12/12/2001	2000009-01	NRC	AV	Mitigating	TBD	FAILURE TO MAINTAIN THE FIRE AREA SEPARATION BARRIER BETWEEN THE B T

Ready



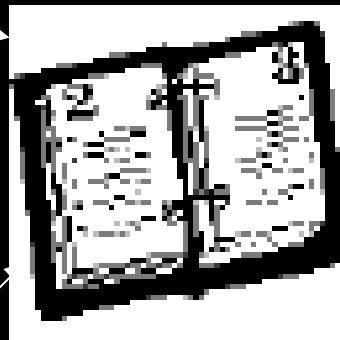
NRC STAFF



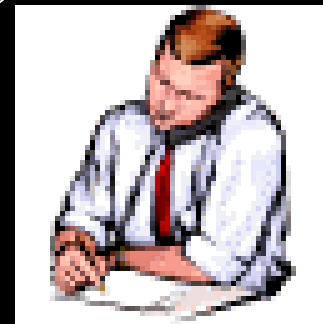
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O  
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Site



RPS/IP

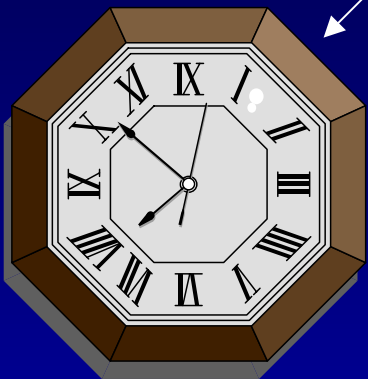


Reports



IR

Actual Hours



RPS ENVIRONMENT



Analysis